Volume 36 No. 4 | **Summer 2023**

Kelseya

Newsletter of the Montana Native Plant Society

Kelseya uniflora
ill. by Bonnie Heidel

Pairing Plant and Pollinator Research

By Madi Crawford
Calypso Chapter

Benny Bevil (YEP) netting for bees in the Gravelly Range, photo by Jessie Salix

Pollinator research is gaining momentum on the Beaverhead-Deerlodge National Forest (BDNF). Species of decline and of special interest include the western bumble bee, Suckley's cuckoo bumble bee, and the monarch butterfly. Surveying pollinators on the Forest gives us a better understanding of what bee and butterfly species use the landscape; without this information, we wouldn't be able to assess long-term pollinator trends.

Bees can be collected by netting or by placing passive traps on the landscape, while butterflies are solely collected via netting. Netting a bee or butterfly is as simple as walking through habitats

IN THIS ISSUE:

(continued on page 3)

Chapter Events

Artemisia Chapter

Info: Jessica Callahan at 507-696-5467; artemisiamnps@gmail.com.

Calypso Chapter

Info: Catherine Cain at 406-498-6198; nativeplants@montana.com or Karen Porter at 406-498-9728; karenwporter44@gmail.com.

Clark Fork Chapter

Info: Teagan Hayes at 920-979-9009; teagan.hayes@gmail.com or Paul Buck at 970-901-2418; paul7703@gmail.com.

Thursday, October 12, 7:00 p.m. Interested in helping raise plants for our **Native Plant Sale**? Elliott Conrad, owner of Pipilo Native Plant Nursery, will conduct a workshop on **Growing Native Plants from Seed** and even how to grow ferns from spores! Join us. UM Campus, Natural Sciences Bldg. Room to be announced.

Eastern At-Large

Info: Kelsey Molloy at 406-654-4566; kelseym88@gmail.com.

Flathead Chapter

Info: Tara Carolin at 406-607-7670; mnps.flathead@gmail.com.

Please see your field trip brochure that you got in the mail for a full listing of field trips or go to https://mtnativeplants.org/whats_new/summer-field-trips/. Email us at mnps.flathead@gmail.com with questions.

Saturday, July 8, 8:30 a.m. to 4:30 p.m. North Fork Forests & Fire. Join Steve Wirt, retired USFS forester and fire manager, where he will discuss fire history over the past 30 years. Emphasis on plant response, identification, and forest succession before and after fires. There may be an opportunity to view the Hay Creek fire of 2021. Hiking the Hornet Lookout Trail will be the highlight of the day. Wear sturdy shoes, bring a sack lunch and plenty of water. Meet at Super One parking lot in Columbia Falls at 8:30 a.m. to carpool up the Northfork of the Flathead River. The trip is limited to 15 people. To sign up, contact Steve at 406-261-2542.

Tuesday, July 11, 10:00 a.m. to 12:00 p.m. Citizen Botany Survey (Tally Lake Ranger District). Join a Citizen Botany survey and contribute to plant conservation by helping to collect data on one of Montana's rare plant species. A short jaunt will bring us to a vernal pool where we will search for northern toadflax (*Geocaulon lividum*) and record data on its presence or absence. Northern toadflax was last surveyed at this site in 1984 so a new survey will allow the Montana Natural Heritage Program (MTNHP) to track its status and provide those data to land managers and planners to aid in the plant's persistence more accurately. Limited to 10 participants. Contact Mason at dazzran@gmail.com to register and receive details.

Tuesday, July 18, 10:00 a.m. to 4:00 p.m. Glacier National Park Weed Blitz. Join fellow citizens in removing invasive plants from priority sites in GNP. Park biologist, Dawn LaFleur, will train participants on identification and effective hand-pulling techniques for targeted weed species. The morning will focus on learning about invasive plant ecology, issues, and identification. We will head into the field during the afternoon. Bring some muscles, water and gloves. The Glacier National Park Conservancy will provide lunch. RSVP by July 11th by emailing glac_citizen_science@nps.gov or calling 406-888-7986.

Wednesday, July 26, 10:00 a.m. Sprunger-Whitney Nature Trail (Swan Lake). Join Friends of the Wild Swan for a guided naturalist hike on the Sprunger-Whitney Nature Trail. The forest will be carpeted with wildflowers and the air filled with the warbles of songbirds. Anne Morley, naturalist and botanist will be your guide. Bring water, lunch and appropriate clothing for the weather. Binoculars are not required but recommended. The two-mile loop trail meanders through a low elevation old-growth forest with interpretive and plant identification signs along the route. Directions: Take Hwy. 83 approximately 7 miles south of Swan Lake. Turn right 1/2 mile south of mile marker 64 and follow the sign to the trailhead. Please contact Anne at 406-886-2242 to let her know you are coming so she can contact you in case of inclement weather.

Saturday, July 29. Nocturnal Pollinator Bioblitz (West Glacier). Join Glacier National Park in its citizen science program to better understand the diversity and vulnerability of nocturnal pollinators as these fascinating creatures are critical to the success of many rare plants and provide a major food source for grizzly bears. Stay tuned to website for more information: https://www.nps.gov/rlc/crown/citizen-science or contact glac_citizen_science@nps.gov with questions.

Kelsey Chapter

Info: Devon Malizia (president) or Jane Fournier (secretary) at kelseychaptermnps@gmail.com.

Maka Flora Chapter

Info: Fraser Watson at 703-509-0152 or Dfw9sb@gmail.com.

Valley of Flowers Chapter

Info: Contact Gretchen Rupp for program details or to be added to the Valley of Flowers Chapter "Friends" e-mail list, at 406-586-8363; beesgrmt@gmail.com.

Western At-Large

Info: Jon Reny at 406-334-0459; jreny@kvis.net.

(Pollinators, continued from page 1)

with abundant flowers, including backyard gardens, sagebrush steppe or foothills, coniferous forests with openings and even subalpine environments. Large, iconic pollinators such as the monarch butterfly can quickly be identified in the field; however, small, fast flying insects such as bees and small butterflies are much harder to identify without a microscope and dichotomous key. Therefore, collecting and preserving insects is integral to identification. Insect collections preserve population data and may be used to study range shifts, seasonal shifts, and even genetic diversity.

Last summer, the BDNF Botany and Wildlife crews partnered with Montana State University (MSU) and the Youth Employment Program (YEP) to learn about our native pollinators and to collect bees. The crews spent a week in the Gravelly Range, south of Ennis, MT, netting native bees and learning insect identification. So far, 19 genera of bees have been identified for this effort by lead bee and wasp curator, Casey Delphia, at MSU. Of the iconic bumble bees, thirteen species have been identified (there are 28 bumble bee species in Montana). The BDNF will again be partnering with MSU and YEP this summer for more bee surveys. Additionally, the crews will be surveying for butterflies and keeping an eye out for milkweed populations (the only host plant for monarch caterpillars). We welcome interested volunteers to contact us for more information: Madison.crawford@usda.gov; 307-629-0576.

The smallest (Hylaeus sp.) and largest (Bombus nevadensis) bees collected during the 2022 Gravelly Range bee sampling event, photo by Casey Delphia

Wanted: Western Bumble Bee (*Bombus occidentalis*) sightings

USGS Northern Rocky Mountain Science Center is looking to conduct pollinator and eDNA surveys at locations with recent sightings of the western bumble bee. As you are out and about conducting fieldwork, hiking in your free time, or even gardening in your backyard, please keep an eye out for the western bumble bee. If you think you see one, please take a photo (if you can) and contact Tabitha Graves tgraves@usgs.gov and/or Erica Gustilo egustilo@usgs.gov. Thank you for your help!

Look for the white butt:

Color variations of female Bombus occidentalis: Northern CA to BC and east to Montana (left) and Rocky Mountains to Alaska (right). *Adapted from xerces.org*

PC: Jeremy Gatten LGL Ltd.

Common look-alikes:

Left to Right: Bombus calignosus, Bombus vandykei, Bombus vosnesenskii, Bombus californicus, Bombus insularis, Bombus fernaldae, and Bombus suckleyi. *Adapted from xerces.org*

Conservation Corner

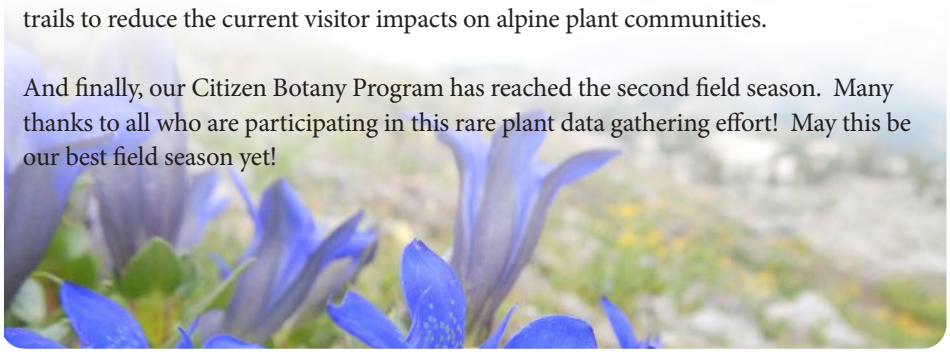
By Elizabeth Bergstrom, Conservation Chair

The Recovering America's Wildlife Act (RAWA) was re-introduced in Congress March 30th. This is a restart for the Act which almost passed at the end of last year. The bill is a bipartisan effort which would invest 1.397 billion per year to help wildlife at risk of extinction and species that are on the way to recovery. State and tribal wildlife agencies will administer this funding with its potential passage in 2023. State agencies would use funds to implement their congressionally mandated State Wildlife Action Plans (SWAP). At this time many states include plants identified as "species of greatest conservation need" (SGCN) in their approved SWAP. MNPS has sent letters encouraging Montana Department of Fish Wildlife and Parks to include plants of conservation concern within the Montana SWAP. If included, an additional 1.5 million will be available for creating opportunities for conservation actions which address Montana's rare plants.

"The Montana Native Plant Conservation Strategy: Species and Habitats of Concern" reached a major milestone this May, by meeting the contractual obligations defined by the BLM grant which provided major funding for this endeavor. The components of the Strategy have been defined and Draft Version 1 is complete. As a draft it is not yet ready to be published and distributed. Editing and formatting for publication are the next steps. The Core Strategy Team, numerous agencies and individuals have contributed to this effort. During the last month, our Heritage Botanist, Andrea Pipp, has worked on bringing content by various writers into a singular document. Thank you to all participants and Andrea! This document provides needed information for Montana's State Wildlife Action Plan to obtain plant conservation funding through RAWA. It also provides key information and non-regulatory management recommendations for agencies, landowners and the public for the conservation of rare plants and habitats.

Good news for the Beartooth Highway Interpretive Project! The Shoshone National Forest has received funding through two small grants for three interpretive signs on the Wyoming portions of the highway. The content is being developed to emphasize the fragility of the alpine environment, the short growing season available to alpine plants and the scenic qualities of the area. This May, Jennifer Lyman and I met with the Custer-Gallatin Forest Supervisor and Forest Botanist to discuss human impacts to the plant communities the highway bisects. Working with the Custer-Gallatin we hope to find funding for an additional sign that will complement the Shoshone National Forest interpretive effort. The interpretive sign will be in Montana outside of Red Lodge, effectively bookending this route with visitor information. In addition, we discussed a meeting with key contacts from both National Forests to discuss other options to protect the alpine area. These options may range from simple highway posts with off-highway vehicle use prohibited stickers, to determining hardened sites for parking options and trails to reduce the current visitor impacts on alpine plant communities.

And finally, our Citizen Botany Program has reached the second field season. Many thanks to all who are participating in this rare plant data gathering effort! May this be our best field season yet!



Gentiana calycosa, photo by Matt Lavin

WELCOME NEW AND RETURNING MEMBERS!

The Montana Native Plant Society would like to welcome and thank new members from the following chapters:

Artemisia Chapter

Paula Berg, Dan Berry, Cathy Fitzgerald, Kimberly Frank, Anna Gamez, Beth Hirschi, Grady & Delany Johnson, Jackson Newman, Patrick Scott-Wilson

Calypso Chapter

Roxanne & Mike Bryant

Clark Fork Chapter

Tyler Andrews, Suzanne Fowle, Stephanie J. Frostad, Maggie Gammons, Nancy Gibson, Jason Glenn, Kristi Hager, Kendall Jan Jubb, Ashley Mattson, Nicole Miller, Julie Monk, Marralynn Rodriguez, Christine Walrath

Flathead Chapter

Patty Archibald, Deb Burfeind, Blayne & Brian Furey, Susan How, Mellisa Ingraham, Paulette Lawrence, Connie Marmet-Baldwen, Helen Tyree

Kelsey Chapter

Kyle Barnette, Cedron Jones, Richard Lambson, Robyn & Jared Rivers, Jason Selong, Christine White

Maka Flora Chapter

Thayne Tuason

Valley of Flowers Chapter

Allyson Brekke, Heidi Johnson, Emily Krieger, Roxanna Mclaughlin, Bethanne Schendel, Joyce Seipel, Alison Tierney

Eastern Montana at Large

Carolyn Jones, Henry Thies

Western Montana at Large

Shirl Birrell

And special thanks to Katherine Gauss of the Valley of Flowers Chapter who has joined as a Lifetime Member of MNPS.

Montana's Alpine Annuals - Forty years later

By Doug Reynolds, Eastern At-Large Chapter

I retired to Red Lodge in 2022, 40 years after completing my dissertation on the ecology of three annual species that grow above timberline on the Beartooth Plateau. I wrote about some of this work for the Spring 1992 issue of *Kelseya*.

One of my first activities was to revisit my study sites to see what changes had occurred over the decades. Annual species are exceedingly rare in arctic and alpine environments, presumably because of the difficulty of reproducing during a single, short, cold growing season. The purpose of my research had been to study the morphological and physiological characteristics of these species and measure their survival and reproduction. Populations of many annuals in warmer environments often fluctuate drastically year to year and may even go extinct depending on variation in temperature and precipitation. Unlike the dominant, slow-growing perennial species in the alpine, which can persist vegetatively through a bad year and then reproduce when conditions are more favorable, annuals must produce at least a few seeds every year (or have a persistent seed bank) or vanish. As it turned out, populations of my three species, *Koenigia islandica*, *Polygonum douglasii* and *Polygonum engelmannii* have suffered different fates.

About 20 mature Koenigia islandica plants in flower in an area of about 4 x 3 inches

Koenigia islandica was not known in the United States, outside of Alaska, until a visiting Scandinavian botanist recognized it on Mt. Evans in Colorado in 1953. Dwight Billings and Phillip Johnson then found it in Wyoming on the Beartooth Plateau in 1960. Klaus Lackschewitz made the first Montana collection in 1977, also on the Beartooth Plateau. Most recently, the first and only Utah collection was made in the Uinta Mountains in 2000. *Koenigia islandica* has never been found in any other state. I have looked for it in suitable habitats in the Sierras, Cascades, and White Mountains of New Hampshire without success. In Montana, it has never been found in any other range except the Beartooth Mountains, even nearby ones like the Crazies or Absarokas. It has never been found in Glacier National Park, where the wet areas near Logan Pass look perfect for success. My belief is that it could grow in all these places if it could get there.

How did it get to Montana? Despite having no obvious means for long-distance dispersal, *Koenigia islandica* has one of the most widespread worldwide distributions of any species I know. Work done since my research on pollen characteristics and chloroplast DNA indicates that it likely evolved in the mountains of western China along with five other species that now have been moved from the genus *Polygonum* to *Koenigia*. It then migrated to the Himalayas, north to Siberia, and then in both directions around the pole before moving down the Rocky Mountains to Colorado. Astonishingly, there have been two collections from the tip of South America, a jump of 6000 miles from Colorado with no known populations in between. Was it long-distance dispersal in the gut of a constipated tern as has been jokingly suggested? Or has it just not been found or gone extinct in between? Interestingly, none of its five congeners have migrated beyond western China and the Himalayas.

Since my research, there has been further work on variation in *Koenigia*'s characteristics over its geographical range. In 2009, Wagner found that populations of *Koenigia islandica* could be divided into arctic, high latitude alpine, and alpine ecotypes based upon differences in germination, photosynthesis, growth, morphology, and life-history traits. This comes as no surprise for a species that is distributed over 100 degrees of latitude.

Dense Koenigia populations appearing as light green ridges in moss beds

When I returned to my Beartooth study sites in 2022, I found that all three of my original *Koenigia* populations straddling the Montana-Wyoming state line were still doing well. In fact, population sizes and seed production looked higher than during

my years of observations in 1980 and 1981 with thousands of plants producing seeds at each site. Without much effort, I easily found another four large populations by examining suitable habitat - permanently wet gravels or moss beds beneath late-lying snow fields or along ponds or stream margins where there is little other higher plant competition.

What about the other two annual species? Despite diligent searches in 2022 as well as during earlier visits to the Plateau since 1990, I have never found them above timberline again. My demographic work over the two years of my original study had found that *Koenigia* numbers were increasing while the two *Polygonum* species were declining, especially after the dry summer of 1981. That trend may have continued to local extinction, perhaps because of several low snowpack and dry or cooler years in a row.

Why the differences? As described above, *Koenigia* has been adapted to arctic and alpine environments over extended periods and distances. Its habitat is very specialized and stable where snowmelt supplies a permanent water source for its tiny root system. Snowmelt times are known to vary from year to year by at least three weeks in the Beartooth. There are areas that look perfect for it, but it is absent. *Koenigia* only occurs where sites never dry out, even in the lowest snowpack and warmest years. It germinates and has optimal photosynthetic and growth rates at lower temperatures than the two annual *Polygonum* species which were found in openings between clumps of *Salix*. These sites melt out earlier but have no permanent source of water and usually dry out by mid-August. They most likely invaded the alpine from lower and warmer habitats. An occasional colder or drier alpine growing season may eliminate them.

Perhaps global warming will reverse the prospects for these species. *Koenigia* may not adapt to a warmer, drier alpine climate while the *Polygonum* species might benefit from warmer temperatures and earlier snowmelt.

Doug Reynolds is a retired Botany professor and native plant nursery owner with a longtime interest in alpine plants on the Beartooth Plateau.

The annual Polygonum species grew in openings between Salix shrubs

References:

Hedberg, Olav.1997. The genus Koenigia L. emended Hedberg (Polygonaceae). Bot. J. Linnean Society 124: 295-330.

Long, Cong, et al. 2014. Origin area and migration route: chloroplast DNA diversity in the arctic-annual plant, Koenigia islandica. Science China, Earth Sciences 57: 1- 11.

Reynolds, Douglas N. 1982. Population dynamics of three annual species of alpine plants in the Rocky Mountains. Oecologia 62:250 - 255.

Wagner, Ioan and A. M. Simon. 2009. Divergence among arctic and alpine populations of the annual, Koenigia islandica: morphology, life-history, and phenology. Ecography 32: 114 - 122.

When Times Get Tough, Plants Must Decide

By Peter Lesica, Clark Fork Chapter

Plants are generally induced to switch from vegetative growth (becoming taller and leafier) to flowering by two environmental cues: day length and temperature. However, there is a third, less common and more poorly studied stimulant: stress. In many cases stress inhibits flowering. This makes sense because restraining flowering and especially fruiting allows the plant to conserve resources and survive. However, sometimes just the opposite happens when the plant senses that the stress is severe enough that it can be killed. If it flowers and sets seed before it succumbs to the stress, its progeny have a chance to germinate and grow, and its genes will survive into the future.

After college I spent a decade working in orchards. It was mostly just hard work, but I did learn a few interesting things about plants. Most of the orchards I worked on in Oregon grew three cultivars of apples: Golden Delicious, Red Delicious and Newtown Pipins. When you established a field of delicious apple trees, they would begin to bear fruit in just four or five years after planting. On the other hand, it was usually ten to twelve years before newly-planted Newtowns flowered and bore fruit. Interestingly, orchardists had a way to get around this problem and make their Newtowns bloom earlier. They would girdle young trees, removing a thin circular strip of bark and cambium at the base of each tree. This "fooled the trees into thinking they were going to die," and they flowered that year. The girdled strip healed over before the trees were permanently damaged, and they continued to bloom and bear fruit on a much more profitable time schedule.

Orchardists are pretty smart; as it turns out, so are bumblebees. Both bumblebees and honeybees are colonial, each colony with a single queen giving birth to numerous sterile workers. Honeybee colonies persist for many years, but bumblebees start new colonies from scratch early each spring. The first workers have to find enough pollen to feed their ever-increasing number of juvenile sisters to make the colony successful. But what if there aren't many early-blooming flowers close to the colony early in the year?

Through a series of elegant experiments, Swiss researchers recently found that bumblebees use the same trick as orchardists. They observed that bumblebees spent time injuring flowering plant leaves near their colonies early in the spring. The researchers observed how bee injury affected first-flowering date for black mustard (*Brassica nigra*), an uncommon weed in Montana, and garden tomato (*Solanum lycopersicum*). Then they imitated the bumblebees by injuring the leaves of the two species in a laboratory setting. They found that injured plants flowered eight to 16 days earlier for mustard and five to 25 days earlier in tomato compared to undamaged plants. In addition, they observed that the amount of bee damage to leaves was significantly greater in pollen limited environments. In the wild, bumblebees injured plants near their colonies earlier in the season compared to later when more flowers were blooming. Taken together these results suggest that bumblebees are injuring plants near their colonies in order to obtain more pollen early in the spring.

In a different study, researchers from Fordham University found that populations of black mustard exposed to four generations of drought conditions flowered earlier compared to populations never exposed to drought. Their results suggest that black mustard was also able to evolve earlier flowering in response to drought stress. Of course this only works if a plant can produce seeds without cross-pollination.

Another example of stress-induced flowering has been found in the aquatic plant, duckweed (*Lemna* spp.). Montana has four species of duckweed, mostly occurring in shallow ponds and backwaters of streams. These little floaters rarely flower or produce seeds; under most circumstances they reproduce vegetatively. In the winter, modified fronds called turions, which have high concentrations of starch, can survive in ice. However, duckweeds require fresh water and can be killed by high salt concentrations or by having their aquatic habitat dry up during the summer. Under these circumstances, what are ordinarily vegetative fronds produce tiny flowers and minute capsules with one to five seeds which can survive the saltiness or aridity to germinate when conditions ameliorate.

As people we usually respond to stress by hunkering down and enduring until things get better. We don't get to work having as many children as we can. Some plants have evolved a different strategy: when the going gets tough, make babies now. Obviously both strategies can work.

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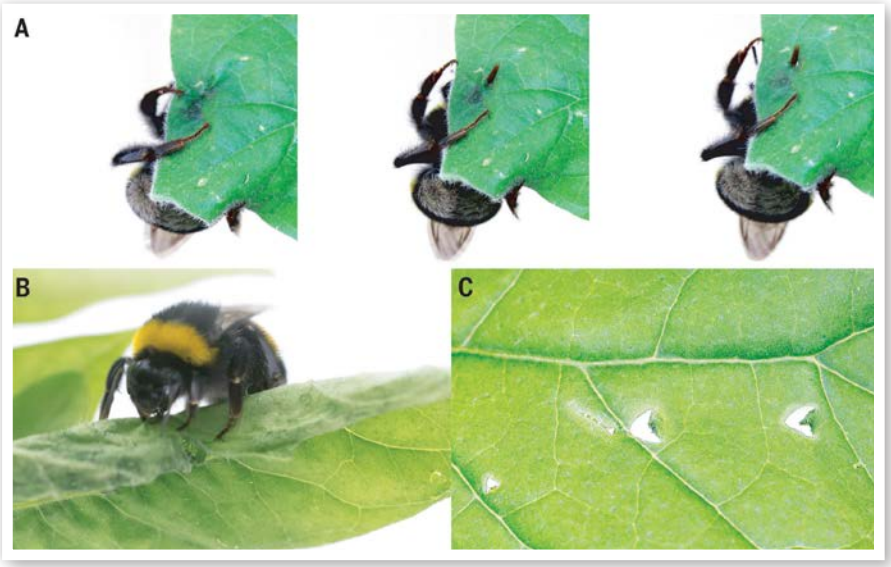

Gardener's Notebook
Using Native Plants in Backyard Landscaping

Rhodiola

By Robyn Klein, MSc., Medical Botanist
Valley of Flowers Chapter

The advertisement read, "Icelandic Wild Harvested Golden Root - Arctic *Rhodiola Rosea* in Premium Quality." Online ads like this indicate how popular *Rhodiola rosea* has become as a botanical dietary supplement for use in anxiety and depression.

Rhodiola rosea

The market for *Rhodiola* is estimated to rise to $2.6 billion by 2028! No wonder *Rhodiola* is being dug out of the wild across the Northern Hemisphere. But, as of February 23, 2023, the roots of all 70 species of *Rhodiola* will be subject to additional import and export requirements due to being added to CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). This protection will require proof that the root was harvested sustainably.

Rhodiola rosea male

Cultivation of *Rhodiola* is increasing, despite the challenging requirements of the crop. Germination rates are low, seeds must be fresh or within a year old, and growers must dedicate 5-7 years of field space to wait until the roots are large enough. In the interim, old, wild populations are being dug up.

Rhodiola (syn. *Sedum*) is a genus in the stonecrop family. These species grow at high-altitude and cold regions such as Russia, China, and Greenland, as well as western U.S. and parts of Canada and Eastern U.S. Two species are native to Montana, *Rhodiola integrifolia* (syn. *Sedum integrifolium*) and *R. rhodantha* (syn. *S. rhodanthum*).

Rhodiola rosea has been growing in my gardens at 5500 feet in Montana for a few years now. I used cold stratification to germinate the seed. But you can also germinate it at 70°F in the light and get about 30% germination in 4-8 days. I encourage all to grow *Rhodiola* species here, and to support a new alternative crop for Montana. See more information on growing *Rhodiola*: https://rhodiolagrowers.ca/.

References:

Dhanda, Sonia. Extinction threats and CITES protection: Rhodiola as a case study. Herbal Reality. September 27, 2022. https://www.herbalreality.com/herbalism/sustainability-social-welfare/exitinction-threats-cites-protection-rhodiola/.

Montemarano, Mike. Rhodiola added to CITES list of protected species. Nutraceuticals World. February 7, 2023. https://www.nutraceuticalsworld.com/contents/view_online-exclusives/2023-02-07/rhodiola-to-be-added-to-cites-list-of-protected-species/.

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Love, Stephen L., and Akins, Candace J. 2020. Sixth summary of the native seed germination studies of Norman C Deno: species with the names beginning with letters R through Z. Native Plants Journal 21(2):150-186.

Rhodiola Growers of Canada. https://rhodiolagrowers.ca/.

Flowering Lemna

(Injury-induced Flowering, continued from page 7)

Further reading:

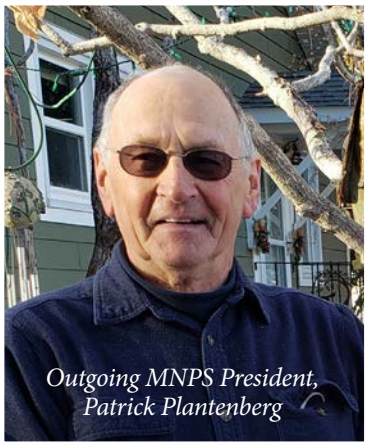
Pashalidou, F. G. et al. 2020. Bumble bees damage plant leaves and accelerate flower production when pollen is scarce. Science 368: 881-884.

Pieterse, A. H. 2013. Is flowering in Lemnaceae stress-induced? A review. Aquatic Botany 104: 1–4.

President's Platform

As my term as president of MNPS ends, I am so proud of what we have achieved as a volunteer group over the years and that I have achieved most of my goals I set as President. I will stay on as co-chair of the Landscaping and Revegetation Committee. I am especially proud to have helped facilitate the reincarnation of the *Artemisia* Chapter for the Billings area. Thank you all for your support over the last two years.

I am proud now to introduce the two younger members that have stepped up to serve as co-presidents for the next two years. They both have great credentials and will lead this organization forward.



Outgoing MNPS President, Patrick Plantenberg

Robert Pal

I am Robert Pal, Professor and Director of Restoration at Montana Tech (Department of Biological Sciences) in Butte. I hold a MS in agriculture and a PhD in biology/plant ecology. My research has been the study of vegetation of disturbed habitats, including agricultural and urban areas. That led me to work on ecological restoration and plant invasions.

As a botanist and plant ecologist, I am fascinated by a fundamental questions in ecology: what interactions determine plant distribution and abundance? This governs my research in both plant ecology and ecological restoration.

My research has involved large-scale field experiments to address how abiotic and biotic interactions influence community composition and diversity in anthropogenically impacted and restored habitats. Besides taxonomically based approaches, I am interested in how environmental conditions and human impacts influence the functional organization of plant communities.

My research also focuses on invasion biology. I study evolutionary changes in invasive plant species (e.g. *Solidago gigantea*, *Conyza canadensis*) and novel plant-plant, plant-soil, plant-microorganisms and plant-herbivore interactions arising from new invasions on a transcontinental scale.

I have received the Fulbright Research Grant and the Marie Curie Research Fellowship. I oversee the Ecological Restoration MS Program, the Restoration Certificate and the Native Plant Restoration Program at Montana Tech. In addition to multiple restoration projects, I am part of several national and international research projects, mainly focusing on biological invasions.

I am actively involved in the Montana Native Plant Society, currently serving as the vice president, and ran for president in the 2023-2025 term. During the upcoming academic year, I will be on a sabbatical leave, conducting research on ecological restoration in Germany, Italy, China, and Australia. With great excitement my intent is to take on the presidential duties of the Montana Native Plant Society in the 2024-2025 term.

Dave Hanna

Since Robert will be away from Montana during the first half of the president's term, I will be filling in during that time. I've worked for The Nature Conservancy in Montana for the last 30 years, including land protection, management, and science. I've also been a long-time member of MNPS, and previously served as MNPS president from 2007-2013. I'm excited to be able to help keep MNPS moving forward!

Karen Porter Receives the MNPS's Outstanding Service Award

The 2023 MNPS Outstanding Service Award was presented to Karen Porter at the Annual Membership Meeting at Bannack State Park, Saturday, June 24th.

Karen is the organizational heart of the *Calypso* Chapter. She is always enthusiastic and works hard to be inclusive of the regionally separated *Calypso* Chapter members. She has a warm, caring and non-judgmental manner that puts everyone at ease when collaborating with her. Karen looks to the future and has inspired others to join her in planning the trajectory of the Chapter. She is always more than willing to volunteer her time and wise judgment to Chapter projects, including the Dillon Native Plant median, putting on field trips and hosting Annual Meetings, this year and in the past. She is a delight to work with.

Karen Porter, Calypso Chapter

Karen serves as the *Calypso* Chapter representative on the MNPS Board-of-Directors, a role she took on over a decade ago. Always an attentive listener, Karen's contributions to Board discussions are consistently well thought out and amply pertinent. She readily steps up to join various ad hoc committees, most recently for awarding student scholarships, where her input and enthusiasm greatly contributed to the success of the project.

-MNPS Awards Committee

MNPS Creates New Grants and Giving Program

For many years MNPS has awarded grants to deserving projects under the "Small Grants Program" for the purpose of stimulating research, conservation, and educational activities that help foster an appreciation for Montana's native plants and plant communities. This program was created when the organization's membership was around 200, and grants reflected what MNPS could support at that time. Since then, our society has grown considerably and MNPS is now able to increase support to entities that further its mission. At the fall 2022 MNPS board meeting the board decided it was time, not only to increase the amount given annually, but to revamp the entire program and offer more ways to provide funding. We are calling it the Grants and Giving Program. In addition, for the first time in our 30+ year history, MNPS will create a separate fund for grants and gifts that will be sourced primarily from donations.

One of the most exciting additions is the creation of an MNPS Scholarship which will help fund students who embark on a board-approved program to obtain knowledge or awareness of Montana's native plants and plant communities. The new G&G Program will also make it easier for any entity to request support for worthy projects by creating subprograms in conservation, research, restoration, and education.

Many details have yet to be developed, so a G&G Committee has been formed and tasked with fleshing out new policies and procedures, all of which will be posted on the MNPS website by this fall/winter. If you are seeking funding for endeavors that promote our mission, keep an eye on our website for more information.

We welcome volunteers who are interested in serving on the G&G committee. For more information, please contact us at mtnativeplantmembership@gmail.com.

Painting of Sagebrush Buttercup by Jane Fournier. Given to Karen Porter for her outstanding service to MNPS.
www.janefournierflora.com

MONTANA NATIVE PLANT SOCIETY MEMBERSHIP

Name (please print)_____

Address_____

City, State, Zip_____

E-Mail_____

Phone_____

JOIN, RENEW, OR DONATE ONLINE AT www.mtnativeplants.org

Please notify us promptly of address changes (physical or email) at mtnativeplantmembership@gmail.com

☑	Membership Type	Dues
☐	Individual	$30
☐	Family	$50
☐	Business/Organization	$75
☐	Living Lightly/Student	$20
☐	Lifetime-Individual Only (one-time payment)	$1,000
☐	Paper Kelseya Fee Add $10 if you wish to receive a paper copy of our quarterly newsletter Kelseya, otherwise an e-version of Kelseya will be delivered via email	$10

An **additional donation** to MNPS helps support conservation action, educational programs, and botanical research. Donors will receive acknowledgement of their contribution in the spring issue of *Kelseya**. You can select from the following giving categories:

- ☐ Kelseya — $50
- ☐ Bitterroot — $100
- ☐ Lupine — $250
- ☐ Ponderosa Pine — $1000
- ☐ Other — $_____

☐ *Check if you wish your donation to be anonymous

☐ Check if you wish to be contacted for volunteer opportunities

Membership in MNPS is on an annual basis, March 1st to February 28th. Memberships processed before November 1st will expire the following February 28th. Memberships processed after October 31st will expire February 28th of the year after.

MNPS Chapters and the Areas They Serve

Members are welcome to affiliate with any chapter. Please select ☑ your chapter affiliation.

- ❑ **Artemisia** (Yellowstone, Golden Valley, Musselshell, Rosebud, Treasure, Big Horn, Carbon, & Stillwater Counties)
- ❑ **Calypso** (Beaverhead, Deer Lodge, Silver Bow & parts of Madison Counties)
- ❑ **Clark Fork** (Mineral, Missoula, Powell, Granite, Ravalli & parts of Lake Counties)
- ❑ **Flathead** (Flathead & parts of Lake and Lincoln Counties)
- ❑ **Kelsey** (Lewis & Clark, Cascade, Pondera, Teton, Chouteau, Judith Basin, Meagher, Broadwater & parts of Jefferson Counties)
- ❑ **Maka Flora** (Richland, Roosevelt, McCone, Sheridan, Daniels, Dawson, Prairie, Wibaux, Custer, Fallon, Powder River & Carter Counties)
- ❑ **Valley of Flowers** (Gallatin, Park, Sweet Grass and parts of Madison Counties)
- ❑ **Eastern-at-Large** (Glacier, Toole, Liberty, Hill, Blaine, Phillips, Valley, Garfield, Petroleum, Fergus, & Wheatland Counties)
- ❑ **Western-at-Large** (Sanders & parts of Lincoln Counties)

Total Enclosed $_____

Make checks payable to: **Montana Native Plant Society**
Please mail this form with your check to:

MNPS
PO Box 8783
Missoula, MT 59807-8783

Welcome to the Montana Native Plant Society!

Memberships are processed on a quarterly basis so you may experience a slight delay in membership recognition and benefits. We appreciate your patience with our all-volunteer organization.

MONTANA NATIVE PLANT SOCIETY
P.O. Box 8783
Missoula, MT 59807-8783

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About Montana Native Plant Society

The Montana Native Plant Society (MNPS) is a 501(c)(3) not-for-profit corporation chartered for the purpose of preserving, conserving, and studying the native plants and plant communities of Montana, and educating the public about the value of our native flora. Contributions to MNPS are tax deductible, and may be designated for a specific project or chapter, for the Small Grants Fund, or the general operating fund.

Your yearly membership fee includes an electronic subscription to *Kelseya*, the quarterly newsletter of MNPS. We welcome your articles, field trip reports, book reviews, or anything that relates to native plants or the Society. Please include a line or two of "bio" information with each article. Drawings should be in black ink or a good quality photocopy. All items should be emailed to scottguse@yahoo.com and jenhintzguse@gmail.com, or mailed to: Scott and Jennifer Guse, *Kelseya* Editors, 725 Twin Lakes Road, Whitefish, MT 59937.

Fall issue deadline is September 10

Please send web items to our webmasters:
Bob Person and Carol Goffe at mnpswebmaster@gmail.com

Advertising space is available in each issue at $5/column inch. Ads must be camera-ready and must meet the guidelines set by the Board of Directors for suitable subject matter; that is, be related in some way to native plants or the interests of MNPS members.

If you would like extra copies of *Kelseya* for friends or family, contact the Newsletter co-editors at: scottguse@yahoo.com or jenhintzguse@gmail.com. No part of this publication may be reprinted without the consent of MNPS. Reprint requests should be directed to the newsletter co-editors.

Changes of address and inquiries about membership should be sent to **MNPS Membership, P.O. Box 8783, Missoula, MT 59807-8783**.

Please visit our website at www.mtnativeplants.org

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